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DOE FOR A/S KARSNER  
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SUBJECT: DOE A/S KARSNER MEETS WITH NEW ZEALAND ENERGY LEADERS

REF: 07 WELLINGTON 695

11. (SBU) Summary: On January 14, US Department of Energy (DOE) Assistant Secretary Alexander Karsner met in Wellington with key NZ energy officials and experts in roundtable discussions hosted by the NZ Ministry of Research, Science and Technology (MoRST). The productive dialogue covered many energy-related topics, during which Karsner encouraged continued collaboration between NZ and the US on energy issues and invited NZ representatives to visit DOE research facilities in the US. End Summary.

#### Roundtable Discussion with NZ Energy Officials

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12. (SBU) On January 14, DOE A/S Karsner met in Wellington with key NZ energy officials in a roundtable discussion at the offices of MoRST. Participants included Dr. Helen Anderson (Chief Executive, MoRST), David Smol (Deputy Secretary, Energy and Communications, Ministry of Economic Development), Tony Frost (Senior Advisor, Technology and Fuels, Ministry of Transport), Eric Pyle (Director of Environmental and Social Development, MoRST), David Crawford (General Manager, Land Transport Environment and Safety, Ministry of Transport), Ken Kirkpatrick (Department of the Prime Minister and Cabinet), Mike Underhill (Chief Executive, Energy Efficiency and Conservation Authority), and Martyn Pinckard (Senior Manager, Household Sustainability Program, Ministry of the Environment). Also accompanying A/S Karsner were an Embassy political specialist and Poloff.

13. (SBU) In his opening remarks, Karsner noted how NZ successfully meshes its environmental and energy policy debates, to include inter-agency communications and the allocation of resources, toward meeting the challenges presented in both areas. He commented that in order to meet the world's environmental challenges, energy must be part of the solution and not "the culprit." That is a global effort, according to Karsner, and one country alone cannot supply all of the answers. In the last three years, continued the A/S, the US has made enormous strides in the development of renewable energy by changing focus from research and development to applied science and commercialization. The US is also incorporating the technological "push" and the market-demand "pull" to good effect. Communication and the sharing of knowledge are vital as well, he stressed, if the development of renewable energy is to move forward.

#### New Zealand Energy Strategy Explained

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14. (SBU) Ministry of Economic Development Deputy Secretary Smol stated that the GNZ has taken a bold approach by announcing its goal to make NZ a completely "sustainable" nation and that, over time, the GNZ will sharpen that goal into focused policy outcomes. He explained that the NZ energy strategy has three tracks:

- Leadership (including the use of "flagship projects" such as carbon neutral government agencies, waste management/minimization, sustainable government procurement to grow markets, and energy efficiency standards);
- Modifying household and business behavior (i.e., modifying consumer and business purchasing decisions); and
- Working with other partners (energy producers, private industry and NGOs) to establish "platforms" for the development of sustainable energy (as one example, to encourage the development of such energy, the GNZ has announced a 10-year moratorium on the construction of base-load energy generation that uses fossil fuels).

This overall strategy is based on two underlying concepts:

- The government's target of carbon neutrality; and
- The implementation of the government's proposed comprehensive "Emissions Trading Scheme" (ETS). (reftel)

According to Smol, it will be "a tricky balance between global and local challenges," i.e., to comply with the Kyoto Protocol and meet NZ's environmental goals "without disrupting the energy distribution system and prices."

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15. (SBU) Karsner commented that NZ's implementation of ETS will be a useful measurement tool, but it is insufficient by itself and must be combined with other mechanisms and options in order to successfully bring about change. The US, for example, has a broad range of options at the state and federal levels to address renewable energy, energy security, emissions control, and climate change mitigation. The US has 53 "laboratories" (i.e., states and territories) for energy research and development, all relatively powerful when compared to the US federal government. He added that NZ appeared to have more of a regulatory focus than the US, which is relying more on market forces as the instrument for developing renewable energy. It is not government regulation, the A/S maintained, but the marketplace that is the real locomotive for change.

16. (SBU) Pyle noted that NZ has every conceivable natural resource to assist in providing a renewable energy supply, including wind, solar, geothermal and tidal.

Biofuel Is Promising, But It's Role Depends on Economics  
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17. (SBU) Smol stated that the role of biofuel is largely dictated by economics. Once the regulatory framework is established, the oil companies must then adjust their practices to deal with the new operating environment. Moreover, NZ must be careful that the development of biofuel does not adversely impact the environment and that "we don't cut down forests to do it." In order to achieve meaningful progress in this area, NZ must work with the USG.

18. (SBU) Karsner stated that in 2007 the US committed USD 1 billion toward research and development of waste stream biofuel, and estimated that 2008 will be the first time in 35 years that the US will import less petroleum than the previous year. However, he noted that biofuel will only be successful as an alternative to fossil fuels when market forces and the profit imperative pull fuel companies into the business. He also invited NZ officials to visit the US National Renewable Energy Lab in Colorado to learn more about what the US is doing in the field of biofuel.

Tidal Current Energy - At Experimental Stage Only

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¶9. (SBU) Smol noted that tidal current energy has huge potential in NZ, but the technology cannot match aspirations at present and it is only in the experimental stage.

#### Transportation - Promotion of Flex-fuels and Electricity

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¶10. (SBU) Crawford stated that NZ has approximately 700 vehicles per 1,000 persons - a similar ratio to the US. He explained that if NZ is to become carbon neutral, it must first stop the annual increase in vehicle emissions, which must begin with the government fleet. There, the GNZ is focusing on improving fuel efficiency and the use of flex fuels. Karsner warned that the use of flex fuels in the US caused "an aberration" by actually reducing fuel efficiency and requires more study.

¶11. (SBU) Frost commented that NZ has a goal of being a leader in the use of electric vehicles - both buses and cars. In that regard, the Ministry of Transport aims to facilitate the entry of electric vehicles into the marketplace by creating an environment where electric vehicles are more attractive to consumers. NZ is also working with Boeing Aircraft Company to develop biodiesel fuel from algae.

#### Energy Storage is the Key to Integrating Renewable Energy

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¶12. (SBU) PM Advisor Kirkpatrick asked Karsner if the development of energy storage sites was a priority for the USG. Karsner responded that energy storage is the highest priority in all sectors of US Department of Energy research. "It is the key to integrating renewable energy into the grid."

#### Antarctica - Karsner Desires a Switch to Renewable Energy

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¶13. (SBU) Karsner mentioned his recent visit to Antarctica as a guest of the US National Science Foundation, and noted that the US

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McMurdo Station, the US Amundson-Scott South Pole Station, and the NZ Scott Base are all completely dependent on the import of petroleum fuels for power and heat. He expressed his interest in helping those facilities switch to renewable fuel sources to cut costs and to demonstrate US commitment to renewable energy. Anderson mentioned that NZ's Meridian Energy Company is already looking into the construction of a wind energy site at NZ's Scott Station.

#### Roundtable Discussion with NZ Energy Experts

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¶14. (SBU) A/S Karsner also participated in roundtable discussions with NZ energy experts in the MORST office. In attendance were Karsner, Anderson, Dr. Elspeth McRae (Group Manager, Biomaterials Research, Scion Corporation), Colin Harvey (Geothermal Business Development Manager, GNS Science Corporation), Dr. Tom Richardson (Chief Executive, Scion Corporation), Alan Seay (Corporate Affairs Director, Meridian Energy Corporation), Dr. Sean Simpson (Chief Scientific Officer and Founder, Lanzatech Corporation), and Poloff.

¶15. (SBU) McRae explained that Scion is actively working toward development of NZ's biomass resources. However, NZ needs a dedicated energy crop for biofuel production because biomass waste resources will not be enough to provide for NZ's energy security.

¶16. (SBU) Harvey explained NZ's current involvement in geothermal energy production, noting that NZ has a grid capacity of 7,000 megawatts (MW) and, of that capacity, geothermal has the potential of providing 2,485 MW. At the present time, however, geothermal is providing only 900 MW. Simpson stated that development of renewable energy sources is not the only challenge. One large unresolved issue is how to integrate all sources of energy into the market and into the grid.

## Photovoltaics - Depends on Efficiency, Cost and Integration

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¶17. (SBU) Seay noted that the biggest hurdle for Meridian in the development and use of photovoltaic energy is the efficiency of solar cells. Karsner replied that, at least in the case of the developing world, efficiency is not as important as cost. Also, as with the use of all renewable energy sources, storage is the key to integrating such energy into the grid. Karsner emphasized that energy storage is a priority for his office, and the key to integrating renewable energy into existing systems.

## Biofuel - Making Ethanol from Steel Production Flue Gas

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¶18. (SBU) Simpson outlined Lanzatech's research program, and noted that it is developing ethanol production using flue gas from steel production waste.

## Geothermal Energy - Vast but Challenging

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¶19. (SBU) Anderson commented that there is a greater incentive to develop NZ's vast geothermal energy potential over all other options. Karsner asked why NZ's geothermal potential is not being maximized. Seay explained that the available geothermal resources are at inconsistent depths and temperatures. In addition, many of the sites with geothermal potential lie on Maori land (which presents licensing difficulties) and geothermal is not without disadvantages (chemical effluent/waste).

## Wind Energy - Harder than it Looks

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¶20. (SBU) According to Seay, NZ has vast wind energy potential. However, the problems in developing that potential include a shortage of wind turbines, where the demand currently exceeds supply (though a manufacturing plant is now being constructed in China); and transmission hurdles (i.e., the most potential exists on the south island, while the most demand exists on the north island).

¶21. (SBU) Seay noted that it is preparing to install 62 wind turbines near Wellington, and three turbines at NZ's Scott Base in Antarctica by March 2009 and is exploring the installation of another 14 turbines. Simpson added that Lanzatech is exploring the use of wind turbines with expandable blades, which promise to

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increase efficiency by 40 percent.

## A/S Karsner Concludes with Call for Dialogue

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¶21. (SBU) In concluding the discussions, A/S Karsner expressed his appreciation for the opportunity to confer with NZ officials and experts on the subject of renewable energy. He urged continuing dialogue between NZ and the US and renewed his invitation for GNZ representatives to visit the DOE National Renewable Energy Lab in Colorado.

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